PATENT COOPERATION TREATY

PCT

Translation INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or ag	gent's file reference	e				
0000054447		FOR FURTHER A	CTION	See Form PCT/IPEA/416		
International application No.			International filing date (day/month/year)		Priority date (day/month/year)	
PCT/EP2004/003689		89	07.04.200	4	11.04.2003	
nternational Pat	ent Classification	(IPC) or natio	onal classification and l	IPC		
Applicant						
BASF AF	KTIENGESE	LLSCHA	AFT			
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			ninary examination rep e applicant according to		International Preliminary Examining Authority	
2. This R	EPORT consists of	of a total of _	6	sheets, including	g this cover sheet.	
			NNEXES, comprising:			
a. D	(sent to the d	applicant and	to the International Bu	reau) a total of 2	sheets, as follows:	
					mended and are the basis for this report and/or	
		containing rec			le 70.16 and Section 607 of the Administrative	
	sheets the dis Box.	which superse closure in the	ede earlier sheets, but international application	which this Authority con ion as filed, as indicated	siders contain an amendment that goes beyond in item 4 of Box No. I and the Supplemental	
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			rative Instructions).	s majeated in the supple	mental box remains to bedacine bisting (see	
4. This r	eport contains ind	ications relati	ng to the following iter	ns:		
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$\overline{\Box}$	Box No. II	Priority				
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님	Box No. III		•	regard to novelty, inven	tive step and industrial applicability	
	Box No. IV		ty of invention	25(2) 11 14	1	
	Box No. V		tatement under Article d explanations support		elty, inventive step or industrial applicability;	
	Box No. VI		uments cited			
\Box	Box No. VII	Certain defi	ects in the international	l application		
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	Box No. VIII		ervations on the intern			
Date of submis	sion of the deman	d		Date of completion of the	his report	
Name and mailing address of the IPEA/EP				Authorized officer		
Faccimile No.				Telephone No		

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Box	No. I	Basis of the report							
1.		to the language, this report is based on the internation der this item.	al application in the language in	which it was filed, unless otherwise					
	This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of: international search (Rule 12.3 and 23.1(b)) publication of the international application (Rule 12.4) international preliminary examination (Rule 55.2 and/or 55.3)								
2.	With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):								
	$\overline{\square}$	ternational application as originally filed/furnished							
	pages	•		as originally filed/furnished					
	pages	*	received by this Authority on						
	pages	*	received by this Authority on						
	the cl	aims:							
	nos.			as originally filed/furnished					
	nos.*		as amended (togethe	r with any statement) under Article 19 11.12.2004 with letter					
	nos.*	1-11	received by this Authority on						
	nos.*		received by this Authority on						
	the di	rawings:							
	sheet	s		as originally filed/furnished					
	sheet	s*	received by this Authority on						
	sheet	s*	received by this Authority on						
	a seq	uence listing and/or any related table(s) - see Supplem	ental Box Relating to Sequence I	isting.					
3.	The a	The amendments have resulted in the cancellation of:							
l		the description, pages							
		the claims, nos.							
l		the drawings, sheets/figs							
		the sequence listing (specify):							
4.		report has been established as if (some of) the amend have been considered to go beyond the disclosure as fi	Iments annexed to this report and	l listed below had not been made, since					
		the description, pages							
		the claims, nos.							
		the drawings, sheets/figs							
		the sequence listing (specify):							
		any table(s) related to sequence listing (specify):							
*	* If item 4 applies, some or all of those sheets may be marked "superseded."								

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	nent under Article 35(2) with regard to novelty, inventive step or industrial applicability; planations supporting such statement					
1. Statement						
Novelty (N)	Claims 1-11	YES				
	Claims	NO				
Inventive step (IS)	Claims	YES				
	Claims 1-11					
Industrial applicability (IA)						
, (,	Claims 1-11 Claims					
2. Citations and explanations (Ru						
1. This report makes reference to the following						
doc	documents:					
D1:	: EP-A-1 048 668 (HOFFMANN LA ROCHE) 2					
	November 2000 (2000-11-02)					
D2 :	: EP-A-0 995 749 (HOFFMANN LA ROCHE) 26					
	April 2000 (2000-04-26)					
D3	: EP-A-0 730 034 (HOFFMANN LA ROCHE) 4					
	September 1996 (1996-09-04)					
D4	: EP-A-0 457 075 (BASF AG) 21 November					
	1991 (1991-11-21)					
D5	: EP-A-0 307 767 (HOFFMANN LA ROCHE) 22					
	March 1989 (1989-03-22)					
Wit	th the letter of 30 September 2004, the					
	applicant submitted a new set of claims,					
1	claims 1-11, from which the originally					
	submitted claims 12-17 were deleted and in					
	which claim 1 was amended by the inclusion of					
	the subject matter of the original claim 3.					
	requirements of PCT Article 19 have been					
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

2.

2.1 Novelty

Claims 1-11

The subject matter of claims 1-11 differs from

- D1 (see example 1 and claim 1), D2 (see example 1 and claim 1) and D3 (see example 1) by a precipitation directly after the dissolution process without the addition of active charcoal (see method step b) in claim 1)
- D4 by method step a)
- D5 by avoiding the use of a second solvent

Claims 1-11 meet the requirements for novelty.

3.2 Inventive step

D1 is regarded as the closest prior art. D1 discloses a method for producing riboflavin of modification B/C in granulated form (see example 1) characterized in that

- riboflavin of modification A is dissolved in aqueous inorganic acid
- the solvent is treated with activate carbon and subsequently filtered.

Proceeding from D1, the applicant describes the problem to be solved as that of providing a method for producing riboflavin of B/C modification in granulated form with a high degree of purity and a high yield.

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The solution to this problem is provided by a method according to claim 1 characterized by precipitation directly after the dissolution process, without the addition of active charcoal (method step b).

The problem cannot, however, currently be regarded as solved, because the application contains no reference to the degree of purity or yield of the B/C riboflavin produced using the method according to the application as compared to that produced using the method in the prior art.

Proceeding from the technical teaching of D1 and D2, a person skilled in the art is not surprised to obtain riboflavin of B/C modification in granulated form, even when active charcoal is not used. Paragraphs (0017) and (0033) of D1 teach that the B/C modification is no longer converted into A. Paragraph (0014) of D2 teaches that the active charcoal serves only to filter the dissolved impurities and therefore does not contribute to forming the B/C modification. Therefore, a person skilled in the art would not be surprised to obtain the riboflavin granulate of B/C modification according to the claimed method.

The presence of a surprising effect could

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substantiate an inventive step. The data in Table 3 of the present specification, however, do not substantiate an effect that would be considered surprising, since it is not clear whether the comparative tests were designed in accordance with the closest prior art, i.e. in accordance with example 1 in D1 and D2.

The requirements for inventive step are not currently fulfilled.